

REMARKS

Preliminary Remarks

The Non-Final Office Action of March 16, 2005 has been received and reviewed. Claims 1-27 are pending. The Applicants have amended claims 1 and 16 to more accurately describe the invention. Support for these amendments is found at least in the Specification at pages 10-12 and Figure 6. Thus, no new matter is added.

The Applicants have also amended claims 10, 12, 16, and 24 to correct informalities noted by the Examiner. In these amendments, the Applicants have made changes to the language of each claim to render the same more consistent, as well as more fully in compliance with U.S. syntax, idiom, and grammar. These amendments do not change the scope of the claims, but are merely cosmetic changes that do not give rise to file wrapper estoppel.

The Applicants have also amended the specification to correct a typographical error in the priority date. Specifically, the specification at page 1, lines 4 and 5 incorrectly stated that the instant application had priority to a Korean patent document filed on May 1, 2002. The specification was amended to accurately state that the instant application claims priority to the Korean patent document filed on May 1, 2003. No new matter is added, because this amendment is based on the certified copy of the priority document previously submitted.

Regarding the objection to the drawings, that a feature of claim 17 reciting that "...the first angle is larger than the second angle" is not shown in the drawings, the Applicants respectfully invite the Examiner to review Figure 6, and page 16, lines 7-15 of the Specification, which provide support for this feature. Accordingly, the Examiner's kind invitation to amend the drawings is respectfully declined at this time.

With reference to Figure 6, base claim 16, and page 16, lines 7-15 of the Specification, the "first angle" recited in claim 17 refers to the angle of the primary grain boundaries with the direction of current flow in the channel area of the switching TFT. Lines 10-11 of page 16

indicate that this angle may be generally about 90°. The "second angle" recited in claim 17 refers to the angle of the primary grain boundaries with the direction of current flow in the channel area of the driving TFT. Lines 14-15 of page 16 indicate that this angle may be generally about 0°. Because 90° is larger than 0°, claim 17 correctly recites that "...the first angle is larger than the second angle." Because the feature of claim 17 is fully supported by the Specification and shown in at least Figure 6, the objection to the drawings should be withdrawn.

For the above reasons, reconsideration and withdrawal of all pending objections and rejections in view of the above amendments and following remarks is respectfully requested.

35 U.S.C. § 102 Rejection

Claims 1-3 stand rejected under 35 U.S.C. § 102(a) as being anticipated by U.S. Patent Application Publication No.: 2003/0062845 to Yamazaki, et al. ("Yamazaki"). This rejection is moot in view of the amendment made to claim 1.

As amended, claim 1 recites, in pertinent part:

....wherein a direction of current flow with respect to the grain boundary at the channel area of the driving thin film transistor is different from a direction of current flow with respect to the grain boundary at the channel area of the switching thin film transistor, and

wherein a direction of current flow with respect to the grain boundary at the channel area of the driving thin film transistor is not the same as a direction of current flow with respect to the grain boundary at the channel area of the switching thin film transistor.

The Applicants respectfully direct the Examiner's attention to paragraph [0047] of Yamazaki where it is stated that:

The remarkable structure in FIG. 1 is that the current driver TFT's 102a and 102b are formed such that the channel length directions thereof are different from each other.

Thus, to operate as described in Yamazaki's specification, the Yamazaki device requires two driving TFT's electrically connected to a light emitting element 121 and connected in parallel with each other (See Figures 4 and 16). One of the two driving TFTs always has the same channel length direction as the switching TFT, and the other driving TFT has a channel length direction different from that of the switching TFT.

On the other hand, the present invention is operable with only one driving TFT at each pixel, and the channel length direction of the driving TFT is not the same as that of the switching TFT. The present invention does not have a driving TFT whose channel length direction is the same as that of the switching TFT. In the present invention, the driving TFT's of all pixels have a lower current mobility than the switching TFT's; however, by making this sacrifice, the current mobilities of the driving TFT's of all the pixels can be more uniform. For example, referring to the Applicants' Figure 6, it is seen that the current flows across more grain boundaries in driving TFT 21 than in switching TFT 11. A greater number of grain boundaries means the standard deviation of the average number of grain boundaries per pixel is less. For at least these reasons, claim 1 is allowable over Yamazaki.

Claims 2-3 are also allowable over Yamazaki by virtue of their dependencies on allowable base claim 1. Accordingly, the rejection of claims 1-3 should be withdrawn, and these claims passed to issuance.

35 U.S.C. § 103 Rejection

Claims 4-27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamazaki in view of U.S. Patent No. 6,456,013 to Komiya, et al. ("Komiya"). This rejection is moot in view of the amendments made to claims 1 and 16.

Claim 16 was amended to recite in pertinent part, "wherein the first angle is not the same as the second angle." Like claim 1, claim 16 further recites each pixel comprises one

switching thin film transistor and one driving thin film transistor. Komiya was cited only for the proposition it would have been obvious for a skilled artisan at the time the invention was made to modify the invention of Yamazaki to use polycrystalline silicon. Consequently, Komiya does not cure the deficiencies of Yamazaki outlined above. Thus, claim 16 is allowable over the combination of Yamazaki and Komiya.

Claims 17-27 are also allowable over the combination of Yamazaki and Komiya by virtue of their dependencies on allowable claim 16. Accordingly, the rejection of claims 16-17 should be withdrawn and these claims passed to issue.

Moreover, claims 4-15 are allowable over the combination of Yamazaki and Komiya by virtue of their dependencies on allowable base claim 1. Accordingly, the rejection of claims 4-15 should be withdrawn, and these claims passed to issue.

CONCLUSIONS

The Applicants submit that a full and complete response has been made to the pending Office Action and respectfully submit that all of the stated objections and grounds for rejection have been overcome or rendered moot. Accordingly, the Applicants respectfully submit that all pending claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is thus respectfully requested to pass the above application to issue.

Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact the Applicants' undersigned representative at the number below to expedite prosecution. Prompt and favorable consideration of this Amendment is respectfully requested. The Applicants respectfully request that a timely Notice of Allowance be issued for this application.

Respectfully Submitted,



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